

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: March 6, 2002, 13:34:59 ; Search time 25.15 Seconds
(without alignments)
1902.638 Million cell updates/sec

Title: US-09-405-504A-25

Perfect score: 3372

Sequence: 1 MRAPGAGAASVSLALLWLL.....HYLPINEAVYTRICSGAFAL 646

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 522463 seqs, 74073290 residues

Total number of hits satisfying chosen parameters: 522463

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

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20: /SID88/gcgdata/geneseq/geneseq/AA1999.DAT.*
21: /SID88/gcgdata/geneseq/geneseq/AA2000.DAT.*
22: /SID88/gcgdata/geneseq/geneseq/AA2001.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Query Score	Match Length	DB ID	Description
1	3372	100.0	646 20	AA14942 Amino acid sequenc
2	3372	100.0	646 20	AA14946 Amino acid sequenc
3	3372	100.0	646 22	AAB83232 Human FATP1 SEQ ID
4	3372	100.0	646 22	AAB83234 Human FATP1 SEQ ID
5	3372	100.0	646 22	AAB83239 Human FATP1 SEQ ID
6	3372	100.0	646 22	AAB83246 Human FATP1 SEQ ID
7	3367	99.9	646 20	AA140435 Human FATP protein
8	3360	99.6	646 20	AA140436 Human FATP1 protei
9	3280	97.3	630 22	AAB83244 Human FATP1 SEQ ID
10	3062	90.8	646 20	AA14952 Amino acid sequenc
11	3057	90.7	646 22	AAB83269 Murine FATP1 SEQ I

12	3054	90.6	646	22	AAB83235 Murine FATP1 SEQ I
13	3026.5	89.8	647	20	AA14955 Amino acid sequenc
14	3026.5	89.8	647	22	AAB83255 Murine FATP1 SEQ I
15	2970	88.1	630	22	AAB83252 Rat FATP1 SEQ ID N
16	2119	62.8	643	20	AA14943 Amino acid sequenc
17	2119	62.8	643	20	AA14949 Amino acid sequenc
18	2119	62.8	643	22	AAB83233 Human FATP4 SEQ ID
19	2119	62.8	643	22	AAB83242 Human FATP4 SEQ ID
20	2119	62.8	643	22	AAB83249 Human FATP4 SEQ ID
21	2114.5	62.7	632	22	AAB83236 Human FATP4 SEQ ID
22	2114.5	62.7	632	22	AAB83240 Human FATP4 SEQ ID
23	2076	61.6	643	22	AAB83243 Murine FATP4 SEQ I
24	2074.5	61.5	643	20	AA14945 Amino acid sequenc
25	2074.5	61.5	643	20	AA14958 Amino acid sequenc
26	2071.5	61.4	643	22	AAB83257 Murine FATP4 SEQ I
27	2070.5	61.4	632	22	AAB83237 Murine FATP4 SEQ I
28	2041.5	60.5	627	22	AAB83245 Murine FATP4 SEQ I
29	1920.5	57.0	616	21	AA842756 Human OREF ORF2520
30	1825.5	54.1	511	21	AA171058 Human membrane tra
31	1814.5	53.8	511	22	AAB83254 Human protein sequ
32	1719.5	51.0	506	20	AA14934 Amino acid sequenc
33	1719.5	51.0	506	22	AAB83224 Murine FATP4 SEQ I
34	1719.5	51.0	506	22	AAB83272 Murine FATP4 SEQ I
35	1547	45.9	405	20	AA14954 Amino acid sequenc
36	1547	45.9	405	22	AAB83254 Rat FATP4 partial
37	1437.5	42.6	340	22	AAB83218 Murine FATP1 signa
38	1357	40.2	590	20	AA14960 Partial amino acid
39	1357	40.2	590	22	AAB83260 Drosophila FATP pa
40	1267.5	37.6	650	20	AA14962 Amino acid sequenc
41	1267.5	37.6	650	22	AAB83262 C elegans FATPa SE
42	1267.5	37.6	650	22	AAB83274 C elegans FATPa SE
43	1257.5	37.3	655	22	AAB83263 C elegans FATPb SE
44	1234	36.6	304	22	AAB83277 FATP signature seq
45	1094.5	32.5	615	20	AA14963 Amino acid sequenc

ALIGNMENTS

RESULT 1

AA14942

ID AA14942 standard; Protein; 646 AA.

XX

AC AA14942;

XX

DT 31-MAY-2000 (first entry)

XX Amino acid sequence of human hFATP1.

DE Fatty acid transport protein; FATP; long chain fatty acid; LCFA;

KW fatty acid; FATP biosynthesis; obesity; diabetes; heart disease.

XX Homo sapiens.

OS

XX

PN WO9336537-A2.

XX

PD 22-JUL-1999.

XX

PF 14-JAN-1999; 99WO-US00182.

XX

PR 14-JAN-1999; 99US-0232201.

XX

PR 15-JAN-1998; 98US-0071374.

XX

PR 20-JUL-1998; 98US-0093491.

XX

PR 04-DEC-1998; 98US-0110941.

XX

PR 14-JAN-1999; 99US-0232195.

XX

PR 14-JAN-1999; 99US-0232197.

XX

PR 14-JAN-1999; 99US-0232200.

XX

PA (MILL-) MILLENNIUM PHARM INC.

PA (WHEED) WHITEHEAD INST BIOMEDICAL RES.

XX Gimeno RE, Hirsch DJ, Lodish HF, Stahl A, Tartaglia LA;

XX

DR WPI: 1999-444398/37.
DR N-PSDB: AAZ00352.
XX Fatty acid transport proteins and related polynucleotides, useful
PT for treating obesity, diabetes and heart disease
XX Examples; Fig 26; 255pp; English.
XX The invention provides a family of fatty acid transport proteins (FATPs)
CC that mediate transport of long chain fatty acids (LCFAs) across cell
CC membranes into cells. Human and murine FATP proteins and nucleic acids
CC encoding the proteins are provided. The FATP proteins can be produced
CC by standard recombinant methodology. Fatty acid uptake by cells can be
CC modulated by modulating biosynthesis of FATP proteins especially FATP6.
CC In particular, antisense oligonucleotides can be used to modulate FATP
CC biosynthesis. Modulation of FATP6 is useful for inhibiting fatty acid
CC uptake in cardiac muscle of humans. Agents can be directed to cardiac
CC muscle or liver by administration of a complex of the agent and a FATP6
CC binding moiety. DNA encoding FATP proteins can be used as a reference
CC used in detecting variant alleles or homologues. Altering the LCFA uptake
CC by administering an inhibitor or enhancer of FATP transport function in
CC the small intestine can decrease or increase calories available as fats,
CC and can decrease or increase circulating fatty acids. Blocking the
CC function of FATP4 and also FATP2, is useful for treating obesity,
CC diabetes and heart disease.
XX Sequence 646 AA;
SQ

Query Match 100.0%; Score 3372; DB 20; Length 646;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 646; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MRAPGAGAAVSVSLALLWGLPWTWSAAALGVYVGGWRFLRIVCKTARRDLFGLSV 60
Db 1 mrapgagaasvslallwglpwtwsaaalgvvvggwrflrivcktarldlglsv 60

QY 61 LIRVLELRHRRHAGHTIPRTFOAVQORPERLALVDAGTGEWTFPAQLDAYSNVANLF 120
Db 61 lirvlelrhrrhaghtiprtfoavqorperlaldagtgewtfpaqldaysnvanlf 120

QY 121 RQLGFAPGDVVAIFLEGRPEFVGLWLGLAKAGMEALLNVNLRREPLAFCLGTSKAKALI 180
Db 121 rqlgfapgdvvaiflegrepefvgwlglakagmeallnvnlrreplaclgtsgakali 180

QY 181 FGGEMVAADVSGHLKSLIKFCSDGLPPEGILPDTHLLDPLKEASTAPLAQIPSKGM 240
Db 181 fggemvaadvsghlkslikfcsdglppegilpdthlldpllkeastaplaqipsgkm 240

QY 241 DDRLFYITSGTGLPKAAIVVHSRYRMAAFGHAYRMOAADVLYDCLPLYHSAGNIIG 300
Db 241 ddrlyfytsgtgtpkkaivvhsryrmaafghayrmqaadvlydclplyhsagnlig 300

QY 301 VGQCLIXGLTVLVRKFSASRFWDDCIKYNCTVVOYIGETICRYLLKOPVREAEHRHVR 360
Db 301 vgqclixgltvlvvrkfsasrfwddciykncvtvvoygietcryllkopvreaeerrhvr 360

QY 361 AVGNGLRPAIWEETFRGVRQIGEFYVGAETECNCSIANMDGKVCSGFNSRILPHVPIR 420
Db 361 avgnlrlpaiweeterfgvrqigefyvgatecncsianmdgkvcsgfnsrillphvpir 420

QY 421 LVKVNEDTMELLRDAQGLICPCOAGEPGLLVGOINQODPLRRFDGYSSEATSKKTAHSV 480
Db 421 lvkvnedtmellrdaqglcpcagepglvlgoinqodplrrfdgyssesatsskktahsv 480

QY 481 FSKGDSAYLSGDVLVMDDELGYMYFRDRSGDTFRWRGENVSTTEVEGVLRLIGQTDVAVY 540
Db 481 fskgdsaylsgdvlvmddelgymyfrdrsgdtfrwrgeenvsttevegvlrligqtdvavy 540

QY 541 GVAVPVEGKAGMAAADPHSLDNPNAIYQELQKVLAPYARPIFLRLLPQDVTGTFKIQ 600
Db 541 gvavpvegkagmaaadphslldnpnaiyqelqkvlapyarpiflrlpvdvtgtfkik 600

QY 601 KTRLQREGDFDRQTSRDLRFLDLKQGHYLPPLNEAVYTRICSGAFAL 646
Db 601 ktrlqregdfdrqtsrldrlfllkqghyplneavytricsgafal 646

RESULT 2

AA114946
ID AAY14946 standard; protein; 646 AA.

XX AC AAY14946;

XX DF 26-OCT-1999 (first entry)

XX DE Amino acid sequence of human hsFATP1.

XX KW Fatty acid transport protein; FATP; long chain fatty acid; LCFA; human;
KW Fatty acid; FATP biosynthesis; obesity; diabetes; heart disease.

XX OS Homo sapiens.

XX PN WO9936537-A2.

XX PD 22-JUL-1999.

XX PF 14-JAN-1999; 99WO-US00182.

XX PR 14-JAN-1999; 99US-0232201.

XX PR 15-JAN-1998; 98US-0071374.

XX PR 20-JUL-1998; 98US-0093491.

XX PR 04-DEC-1998; 98US-0110941.

XX PR 14-JAN-1999; 99US-0232195.

XX PR 14-JAN-1999; 99US-0232197.

XX PR 14-JAN-1999; 99US-0232200.

XX PA (MILL-) MILLENNIUM PHARM INC.
PA (WHED) WHITEHEAD INST BIOMEDICAL RES.

XX PI Gimeno RE, Hirsch DJ, Lodish HF, Stahl A, Tartaglia LA;

XX DR WPI; 1999-444398/37.
DR N-PSDB; AAZ00356.

XX PT Fatty acid transport proteins and related polynucleotides, useful
PT for treating obesity, diabetes and heart disease

XX PS Claim 30; Fig 45; 255pp; English.

CC The invention provides a family of fatty acid transport proteins (FATPs)
CC that mediate transport of long chain fatty acids (LCFAs) across cell
CC membranes into cells. Human and murine FATP proteins and nucleic acids
CC encoding the proteins are provided. The FATP proteins can be produced
CC by standard recombinant methodology. Fatty acid uptake by cells can be
CC modulated by modulating biosynthesis of FATP proteins especially FATP6.
CC In particular, antisense oligonucleotides can be used to modulate FATP
CC biosynthesis. Modulation of FATP6 is useful for inhibiting fatty acid
CC uptake in cardiac muscle of humans. Agents can be directed to cardiac
CC muscle or liver by administration of a complex of the agent and a FATP6
CC binding moiety. DNA encoding FATP proteins can be used as a reference
CC used in detecting variant alleles or homologues. Altering the LCFA uptake
CC by administering an inhibitor or enhancer of FATP transport function in
CC the small intestine can decrease or increase calories available as fats,
CC and can decrease or increase circulating fatty acids. Blocking the
CC function of FATP4 and also FATP2, is useful for treating obesity,
CC diabetes and heart disease.

XX SQ Sequence 646 AA;

Query Match 100.0%; Score 3372; DB 20; Length 646;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 646; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MRAPGAGAAVSVSLALLWGLPWTWSAAALGVYVGGWRFLRIVCKTARRDLFGLSV 60

|||||
 1 mrpagaasvslallwlgpwtwsaaalgvyvsgwfrlrvcktarldfqlsv 60
 61 LIRVLELRHQRAGHTIPRIFQAVQRPRLALVDAGTCEWTFQAQLDAYSNANLNF 120
 61 LIRVLELRHQRAGHTIPRIFQAVQRPRLALVDAGTCEWTFQAQLDAYSNANLNF 120
 121 RQLGFAPGDVVAIFLEGRPEFVGLWGLAKAGMEALLNVLNRLREPLAFCLGTSKAKALI 180
 121 RQLGFAPGDVVAIFLEGRPEFVGLWGLAKAGMEALLNVLNRLREPLAFCLGTSKAKALI 180
 181 FGGEMVAAEVSGHLGKSLIKFCSDGLPGLDTHLLDPLLEKEASTAPLAQIPSKGM 240
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 301 VGQCLIXGLTVLVRKFKFSARFWDCCIKNCTVVQYIGETCRVLLKQPVREARRHRVRL 360
 301 Vgqcliyglvtvirkkfsasrfdwccikynctvvqyigeicryllkqpvreaerrhrvrl 360
 361 AVGNGLRPAIWEETERFGRVQIGEFYGAFCNCSIANMDGKVGSCGFNSRILPHYPPIR 420
 361 avngnlrpaiweeterfgrvqigefygatecncsianmdgkvsgcgnfnsrllphyppir 420
 421 LKVNEDTMELLRDAGCLIPCOAGEPGLLVGOINQODPLRRPDGYVSESATSKTAHSV 480
 421 lkvnedtmellrdagclipcoagepgllvgoinqodplrrfdgyvsesatskktahsv 480
 481 FSKGDSAYLSGDVLVMDLGYMYFRDRSGDTFRWRGENYSTTEVEGVLRLQLGQTDVAVY 540
 481 fskgdsaylsgdvlvmdelgymyfrdrsgdtfrwrgenvsttevegvlrllgqtdvavy 540
 541 GVAVPGVEGKAGMAAVADPHSLDPNAIYQELQKVLAPYARPIFLRLLPQVDTGTGFKIQ 600
 541 gvavpgvegkagmaavadphslldpnaiyqelqkvlpapyarpiflrlpqvdtgtfkik 600
 601 KTRLQREGFPRTSDRLPFLDLKQGHYLPNEAVYTRICSGAFAL 646
 601 ktrlqregfprrtsdrlpflldlkqghyplneavytricsgafal 646

RESULT 3

AAB83232
 ID AAB83232 standard; Protein; 646 AA.
 AC AAB83232;
 XX

DT 06-JUL-2001 (first entry)
 DE Human FATP1 SEQ ID NO: 25.
 XX

KW Fatty acid transport protein; FATP; human; mouse; rat; rice blast fungus;
 KW yeast; fat absorption; obesity; diabetes; heart disease; hyperlipidaemia;
 KW weight control; tuberculosis; TB; anti-fungal.
 XX

OS Homo sapiens.
 XX

PN WO200121795-A2.
 XX

PD 29-MAR-2001.
 XX

PF 21-SEP-2000; 2000WO-US25891.
 XX

PR 23-SEP-1999; 99US-0405504.
 PR 23-SEP-1999; 99US-0405505.
 PR 16-DEC-1999; 99US-0465280.
 PR 17-FEB-2000; 2000US-0506252.
 PR 06-JUL-2000; 2000US-0611197.
 XX

PA (WHED) WHITEHEAD INST BIOMEDICAL RES.

(MILL-) MILLENNIUM PHARM INC.

Stahl A, Hirsch DJ, Lodish HF, Gimeno RE, Tartaglia LA;
 WPI: 2001-354783/37.
 N-PSDB: AAF89010.

New fatty acid transport proteins (FATPs) useful for the manufacture of
 medicament for treating obesity, diabetes and heart disease -

Disclosure: Fig 26; 287pp; English.

The present invention provides the protein and coding sequences of fatty
 acid transport proteins (FATPs) from a number of species, including
 FATP1, FATP2, FATP3, FATP4, FATP5 and FATP6 from the human, FATP1-FATP5
 from the mouse, FATP4 and b from C. elegans, and FATP from Aspergillus
 nidulans, Drosophila, zebrafish, Magnaporthe grisea, Mycobacterium
 tuberculosis and Cochliobolus heterostrophus. The FATP from M.
 tuberculosis can be used to identify inhibitors which can then be used to
 treat TB. That from M. grisea (also known as rice blast fungus) can be
 used to develop anti-fungal agents capable of preventing infection of
 rice. Those from the human can be used to develop treatments for
 diabetes, heart disease, obesity, hyperlipidaemia and weight control. The
 present sequence is one of the sequences described in the exemplification
 of the invention.

Sequence 646 AA;

Query Match 100.0%; Score 3372; DB 22; Length 646;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 646; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MRAPGAGAAVSVSLALLWGLPMTWSAAAAALGVYVSGWFRLEIRVCKTARRDLFGLSV 60
 Db 1 mrapgagaasvslallwlgpwtwsaaalgvyvsgwfrlrvcktarldfqlsv 60
 QY 61 LIRVLELRHQRAGHTIPRIFQAVQRPRLALVDAGTCEWTFQAQLDAYSNANLNF 120
 Db 61 lrvrlelrhqraghtiprifqavvqrprlaldvagtcewtfqaldaysnavanlf 120
 QY 121 RQLGFAPGDVVAIFLEGRPEFVGLWGLAKAGMEALLNVLNRLREPLAFCLGTSKAKALI 180
 Db 121 rqlgfapgdvvaiflegrepefvglwglakagmeaallnvlrrreplafclgtsgakali 180
 QY 181 FGGEMVAAEVSGHLGKSLIKFCSDGLPGLDTHLLDPLLEKEASTAPLAQIPSKGM 240
 Db 181 fggemvaavaevsghlgslikfcsdglpegilpdtllldpllekeastaplaqipskgm 240
 QY 241 DDRLFYIVTSGTTGLPKAAIVVHSRYRMAAFGHYARMQAAADVLDCLPLYHSAGNIIG 300
 Db 241 ddrlyfitytsgttglpkaaiVVHSRYRMAAFGHYARMQAAADVLDCLPLYHSAGNIIG 300
 QY 301 VGQCLIXGLTVLVRKFKFSARFWDCCIKNCTVVQYIGETCRVLLKQPVREARRHRVRL 360
 Db 301 Vgqcliyglvtvirkkfsasrfdwccikynctvvqyigeicryllkqpvreaerrhrvrl 360
 QY 361 AVGNGLRPAIWEETERFGRVQIGEFYGAFCNCSIANMDGKVGSCGFNSRILPHYPPIR 420
 Db 361 avngnlrpaiweeterfgrvqigefygatecncsianmdgkvsgcgnfnsrllphyppir 420
 QY 421 LKVNEDTMELLRDAGCLIPCOAGEPGLLVGOINQODPLRRPDGYVSESATSKTAHSV 480
 Db 421 lkvnedtmellrdagclipcoagepgllvgoinqodplrrfdgyvsesatskktahsv 480
 QY 481 FSKGDSAYLSGDVLVMDLGYMYFRDRSGDTFRWRGENYSTTEVEGVLRLQLGQTDVAVY 540
 Db 481 fskgdsaylsgdvlvmdelgymyfrdrsgdtfrwrgenvsttevegvlrllgqtdvavy 540
 QY 541 GVAVPGVEGKAGMAAVADPHSLDPNAIYQELQKVLAPYARPIFLRLLPQVDTGTGFKIQ 600
 Db 541 gvavpgvegkagmaavadphslldpnaiyqelqkvlpapyarpiflrlpqvdtgtfkik 600

QY 601 KTRLOREGDPQTSRDLFFLDLKQGHYLPNEAVYTRICSGAFAL 646
 |||||
 Db 601 ktrlregfdrqtssdrifldlkqghyplneavytricsgafal 646

RESULT 4
 AAB83234
 ID AAB83234 standard; Protein; 646 AA.

XX AAB83234;

DT 06-JUL-2001 (first entry)

XX Human FATP1 SEQ ID NO: 32.

XX Fatty acid transport protein; FATP; human; mouse; rat; rice blast fungus;
 KW yeast; fat absorption; obesity; diabetes; heart disease; hyperlipidaemia;
 KW weight control; tuberculosis; TB; anti-fungal.

XX Homo sapiens.

XX WO200121795-A2.

XX 29-MAR-2001.

XX 21-SEP-2000; 2000WO-US25891.

XX 23-SEP-1999; 99US-0405504.

XX 23-SEP-1999; 99US-0405505.

XX 16-DEC-1999; 99US-0465280.

XX 17-FEB-2000; 2000US-0506252.

XX 06-JUL-2000; 2000US-0611197.

XX (WHED) WHITEHEAD INST BIOMEDICAL RES.

PA (MILL-) MILLENNIUM PHARM INC.

XX Stahl A, Hirsch DJ, Lodish HF, Gimeno RE, Tartaglia LA;

XX WPI; 2001-354783/37.

XX New fatty acid transport proteins (FATPs) useful for the manufacture of

PT medicament for treating obesity, diabetes and heart disease -

XX Disclosure; Fig 32; 287pp; English.

XX The present invention provides the protein and coding sequences of fatty
 CC acid transport proteins (FATPs) from a number of species, including
 CC FATP1, FATP2, FATP3, FATP4, FATP5 and FATP6 from the human, FATP1-FATP5
 CC from the mouse, FATP6 and b from C. elegans, and FATP from Aspergillus
 CC nidulans, Drosophila, zebrafish, Magnaporthe grisea, Mycobacterium
 CC tuberculosis and Cochliobolus heterotrophus. The FATP from M.
 CC tuberculosis can be used to identify inhibitors which can then be used to
 CC treat TB. That from M. grisea (also known as rice blast fungus) can be
 CC used to develop anti-fungal agents capable of preventing infection of
 CC rice. Those from the human can be used to develop treatments for
 CC diabetes, heart disease, obesity, hyperlipidaemia and weight control. The
 CC present sequence is one of the sequences described in the exemplification
 CC of the invention.

XX Sequence 646 AA;

Query Match 100.0%; Score 3372; DB 22; Length 646;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 646; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MRAPGAGAAVSVALMLLGLPWTWSAAAALGVYVSGGWRLRVCKTARRDLFGLSV 60
 |||||

Db 1 mrpaggagaaavsvallllglpwtwsaaaalgvvyvsggwrlrvcktarrrdflglsv 60
 |||||

QY 61 LIRVRLRLRHQRAGHTIPRIFQAVQVORPERIALVDAGTGCWTFQALDAYSNVANLIF 120
 |||||
 Db 61 lrvrlrlrrhqrghctprifqavvqrperialvldagtgcwtfqaldaynavanlif 120

QY 121 RQLGFAPGDVVAIFLEGPEFVGLWLGLAKAGMEALLNVNLRREPFLACLTGTSKALI 180
 |||||
 Db 121 rqlgfapgdvvaiflegpefvgwlgakagmeaallnvnlrreplacltsgakali 180
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 QY 181 FGGEMVAANAESVGHGKSLKFCSDGLGPEGILPOTHLDPDLLKASTAPLAQIPSKGM 240
 |||||
 Db 181 fggemvaanaesvghlgkslikfcsgdlpegilporthlldpplkeastaplaqpskqm 240
 |||||
 QY 241 DDRLFYITSGTTGLPKAAIVVHSRYRMAAFHGHAYRMOAADVLDCLPLVHSGAGNIIG 300
 |||||
 Db 241 ddrlyfytstgttglpkaaivvhsryrmaafghghayrmqaadvlydclplyhseagniig 300
 |||||
 QY 301 VGQCLTYGLTVLVRKFSASRFWDCTIKYNTCTVQYIGEICRYLLKQPVREAFRRHRVRL 360
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 Db 301 vgqcllygltcvllvrkfsaasrfwdctikynctvqyigeicryllkqpvreaerrhrvrl 360
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 QY 361 AVGNGLRPAIWEFTEFRFGVQRIGEFYGATECNCSTANMDGKVGSGFNSRILPHVYPIR 420
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 Db 361 avgngrlpaiweefterfgrvqigeifygatecncslanmdgkvsgcfnsrllphvypir 420
 |||||
 QY 421 LVKVNEDTMELLRDAOGLCIPCOAGBPGLLVGOINQODPLRRPDGVVSESATSKKTAHSV 480
 |||||
 Db 421 lvkvnedtmellrdagglcipcagagpgllvgqinqdplrrfdgyvsesatsskklahsv 480
 |||||
 QY 481 FSKGDSAYLSGDVLVMDDELGYMYFRDRSGDTFRWGENVSTTVEGVLSRLLGQTDVAVY 540
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 Db 481 fskgdsaylsgdvvlvmdelgymyfrdrsgdtfrwgenvstteveglsrllgqtdvavy 540
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 QY 541 GVAVPGVEGKAGMAAADPHSLDDPNNAIQEOLKVLAPYARPIFLRLPQVDTGTGFKIQ 600
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 Db 541 gvavpgvegkagmaavadphsllidpnaiyqelkvlapyparfllrpqvdttgtfkikq 600
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 QY 601 KTRLOREGDPQTSRDLFFLDLKQGHYLPNEAVYTRICSGAFAL 646
 |||||
 Db 601 ktrlregfdrqtssdrifldlkqghyplneavytricsgafal 646

RESULT 5

AAB83239

ID AAB83239 standard; Protein; 646 AA.

XX AAB83239;

XX 06-JUL-2001 (first entry)

DT Human FATP1 SEQ ID NO: 38.

XX Fatty acid transport protein; FATP; human; mouse; rat; rice blast fungus;

XX yeast; fat absorption; obesity; diabetes; heart disease; hyperlipidaemia;

XX weight control; tuberculosis; TB; anti-fungal.

XX Homo sapiens.

XX WO200121795-A2.

XX 29-MAR-2001.

XX 21-SEP-2000; 2000WO-US25891.

XX 23-SEP-1999; 99US-0405504.

XX 23-SEP-1999; 99US-0405505.

XX 16-DEC-1999; 99US-0465280.

XX 17-FEB-2000; 2000US-0506252.

XX 06-JUL-2000; 2000US-0611197.

XX (WHED) WHITEHEAD INST BIOMEDICAL RES.

XX (MILL-) MILLENNIUM PHARM INC.

XX Stahl A, Hirsch DJ, Lodish HF, Gimeno RE, Tartaglia LA;

XX WPI; 2001-354783/37.

PT New fatty acid transport proteins (FATPs) useful for the manufacture of
PT medicament for treating obesity, diabetes and heart disease -
PS Disclosure; Fig 36; 287pp; English.

XX The present invention provides the protein and coding sequences of fatty
CC acid transport proteins (FATPs) from a number of species, including
CC FATP1, FATP2, FATP3, FATP4, FATP5 and FATP6 from the human, FATP1-FATP5
CC from the mouse, FATP4 and b from C. elegans, and FATP from Aspergillus
CC nidulans, Drosophila, zebrafish, Magnaporthe grisea, Mycobacterium
CC tuberculosis and Cochliobolus heterotrophus. The FATP from M.
CC treat TB. That from M. grisea (also known as rice blast fungus) can be used
CC used to develop anti-fungal agents capable of preventing infection of
CC rice. Those from the human can be used to develop treatments for
CC diabetes, heart disease, obesity, hyperlipidaemia and weight control. The
CC present sequence is one of the sequences described in the exemplification
CC of the invention.

XX Sequence 646 AA;

Query Match 100.0%; Score 3372; DB 22; Length 646;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 646; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MRAPGAGAAVSLSALLLGLPWTWSAAAALGVYVGGWRFRLVCKTARRDLFGLSV 60
DB 1 mrpagaasvslallwllglpwtwsaaaalgvysggwrfrrivckrtarrdlfglsv 60
QY 61 LIRVLELRHRQAGHTIPRIFOAVVQRPRLALVDAGTGCWTFQAOLDAYSNAVANLF 120
DB 61 lirvrlelrhrqaghtiprifqavvqrperlalvdagtcwtfqaoldaysnavanlf 120
QY 121 ROLGFAPGDVVAIFLEGREFVGLWGLAKAGMEALLNVNLRREPLAFCLGTSGAKALI 180
DB 121 rlgfapgdvvaiflegrefvglwglakagmeaallnvnlrreplafclgtsgakali 180
QY 181 FGEMVAVAEVSGLKSLIKFCSDGLGPEGILPDTHLLDPLLEKASTAPLAQIPSKGM 240
DB 181 fgemvaavaevsghlkslikfcsgdglpegilpdthlldplllekastaplaqipskgm 240
QY 241 DRLFLIYSGTGLPKAAIVVHRSYRMAAFHHAYRMAQADVLDCPLYSAGNIIG 300
DB 241 ddrflfytsgtglpkaaivvhsryrmaafghbayrmaqadvldcplysagniiig 300
QY 301 VGQCLTYGLTVLRRKFSASRFWDGCIKYNCTVVOYIGECRYLLKQPVREARRHVR 360
DB 301 vgqcltyglitvvlrrkfsasrfwdgciykncvtvvoygecryllkqpvrrearhrvr 360
QY 361 AVNGLRPAIWEFTERFGRVQIGEFYGATECNCSIANMDGKVGSCGFNSRILPHVPIR 420
DB 361 avnglrpaiwefterfgrvqigefygatecncsianmdgkvsgcfnsrilmphvpir 420
QY 421 LVKVNEDTMELLRDAGGLICPCQAGEPGLLVGQINQDPLRFRDGYVSESATSKIAHSV 480
DB 421 lvkvnedtmellrdagglcipcqagepglvlgqinqdplrrfrdgyvsesatskiahsv 480
QY 481 FSKGDSAYLSGDLVMDLGYMYFRDRSGDTFRWRGENVSTVEGVLSRLGQTDVAVY 540
DB 481 fskgdsaylsqdlvmdelgymyfrdrsgdtfrwrgevnstvegvlsrlgqtdvavy 540
QY 541 GVAVPGVEGKAGMAAVADPHSLDPNAIYQELQKVLAPYARPIFLRLLPQVDDTCTFKIQ 600
DB 541 gvavpgvegkagmaavadvphslldpnaiyqelqkvlapyarpiflrlpqqvddtctfkqi 600
QY 601 KTRLOREGFDPQTSRDLFFDLKQGHYLPNEAVYTRICSGAFAL 646
DB 601 ktrldregfdpqrtsdrldffdlkqghylpneavytricsgafal 646

RESULT 6
AAB83246

ID AAB83246 standard; Protein; 646 AA.
XX AAB83246;

DT 06-JUL-2001 (first entry)
DE Human FATP1 SEQ ID NO: 47.

XX Fatty acid transport protein; FATP; human; mouse; rat; rice blast fungus;
KW yeast; fat absorption; obesity; diabetes; heart disease; hyperlipidaemia;
KW weight control; tuberculosis; TB; anti-fungal.

OS Homo sapiens.

XX WO200121795-A2.

XX 29-MAR-2001.

XX 21-SEP-2000; 2000WO-US25891.

XX 23-SEP-1999; 99US-0405504.

XX 23-SEP-1999; 99US-0405505.

XX 16-DEC-1999; 99US-0465280.

XX 17-FEB-2000; 2000US-0506252.

XX 06-JUL-2000; 2000US-0611197.

XX (WHEED) WHITEHEAD INST BIOMEDICAL RES.

XX (MILL-) MILLENNIUM PHARM INC.

XX Stahl A, Hirsch DJ, Lodish HF, Gimeno RE, Tartaglia LA;

XX WPI; 2001-354783/37.

XX N-PSDB; AAF89018.

XX New fatty acid transport proteins (FATPs) useful for the manufacture of
XX medicament for treating obesity, diabetes and heart disease -

XX Claim 79; Fig 45; 287pp; English.

XX The present invention provides the protein and coding sequences of fatty
CC acid transport proteins (FATPs) from a number of species, including
CC FATP1, FATP2, FATP3, FATP4, FATP5 and FATP6 from the human, FATP1-FATP5
CC from the mouse, FATP4 and b from C. elegans, and FATP from Aspergillus
CC nidulans, Drosophila, zebrafish, Magnaporthe grisea, Mycobacterium
CC tuberculosis and Cochliobolus heterotrophus. The FATP from M.
CC tuberculosis can be used to identify inhibitors which can then be used to
CC treat TB. That from M. grisea (also known as rice blast fungus) can be
CC used to develop anti-fungal agents capable of preventing infection of
CC rice. Those from the human can be used to develop treatments for
CC diabetes, heart disease, obesity, hyperlipidaemia and weight control. The
CC present sequence is one of the sequences described in the exemplification
CC of the invention.

XX Sequence 646 AA;

Query Match 100.0%; Score 3372; DB 22; Length 646;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 646; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MRAPGAGAAVSLSALLLGLPWTWSAAAALGVYVGGWRFRLVCKTARRDLFGLSV 60
DB 1 mrpagaasvslallwllglpwtwsaaaalgvysggwrfrrivckrtarrdlfglsv 60
QY 61 LIRVLELRHRQAGHTIPRIFOAVVQRPRLALVDAGTGCWTFQAOLDAYSNAVANLF 120
DB 61 lirvrlelrhrqaghtiprifqavvqrperlalvdagtcwtfqaoldaysnavanlf 120
QY 121 ROLGFAPGDVVAIFLEGREFVGLWGLAKAGMEALLNVNLRREPLAFCLGTSGAKALI 180
DB 121 rlgfapgdvvaiflegrefvglwglakagmeaallnvnlrreplafclgtsgakali 180
QY 181 FGEMVAVAEVSGLKSLIKFCSDGLGPEGILPDTHLLDPLLEKASTAPLAQIPSKGM 240

Db 181 fggemvaavsgnlgksllfcsdglpgeglldthlplikeastaplaqpskqm 240
 QY 241 DDRLFYIYTSGLTPKAAIVVHSRYRMAAFGHAYRMOAADVLYDCLPLYHSAGNIIG 300
 Db 241 ddriflytsdgltpkAAIVVHSRYRMAAFGHAYRMOAADVLYDCLPLYHSAGNIIG 300
 QY 301 VQCLLYGLTVLVRKKFSASRFDWDCIKYNTCTVVOYIGETCRYLLKQPVREAEHRHVR 360
 Db 301 vqcllyglTVLVRKKFSASRFDWDCIKYNTCTVVOYIGETCRYLLKQPVREAEHRHVR 360
 QY 361 AVGNGLRPAIWEETERGVQIGFFYGATECNCISIANMDGKVCSCGFNSRILPHVYPIR 420
 Db 361 avgnglrpaIweeterfgrvqigefygatecncsianmdgkvsgcfnslrllphvypir 420
 QY 421 LVKVNEDTMELLRAQGLICPCQAGEPGLLVGINQDDPLRRFDGYVSESATSKIAHSV 480
 Db 421 lvkvnedtmellrdaqglcpcqagepgllvginqddplrrfdgyvsesatkskiahsv 480
 QY 481 FSKGDSAYLSGDVLMDELGYMFRDRSGDTFRWRGENVSTVEGVLRLPGQTDVAVY 540
 Db 481 fskgdsaylsGDVLMDELGYMFRDRSGDTFRWRGENVSTVEGVLRLPGQTDVAVY 540
 QY 541 GVAVPGVEGKAGMAAVADPHSLDPNATYOELQKVLAPYARPIELRLLPQVDTGTFKIQ 600
 Db 541 gvavpgvegkagmaavadvphslldpnalygelqkvlapyparpielrlpQVDTGTFKIQ 600
 QY 601 KTRLQREGFDPQTSRDLRFLDLKQGHYLPNEAVYTRICSGAFAL 646
 Db 601 ktrlqregfdrqtsdrflldlkqghyplneavytricsgafal 646

RESULT 7
 AAY40435
 ID AAY40435 standard; Protein: 646 AA.
 XX AC AAY40435;
 XX DT 08-FEB-2000 (first entry)
 XX DE Human FATP protein sequence.
 XX KW Fatty acid transport protein; FATP; hFATP; cardiomyopathy; diabetes;
 XX KW long-chain fatty acid metabolism; obesity; human.
 XX OS Homo sapiens.
 XX PN WO951740-A2.
 XX PD 14-OCT-1999.
 XX PF 02-APR-1999; 99WO-EP02295.
 XX PR 06-APR-1998; 98EP-0400823.
 XX PA (JANC) JANSSEN PHARM NV.
 XX PA (UNIW) UNIV WASHINGTON.
 XX PI Martin G, Nemoto M, Deeb SS, Auwerx J;
 XX WPI: 1999-620202/53.
 XX DR N-PSDB; AAZ38122, AAZ38125.
 XX PT New human fatty acid transport protein, hFATP, useful to screen for
 XX PT inhibitors or enhancers useful to regulate fatty acid metabolism -
 XX PS Claim 1; Fig 5; 83pp; English.
 XX CC The invention provides a human fatty acid transport protein (hFATP).
 XX CC hFATP is believed to be involved in the modulation long-chain fatty acid
 XX CC metabolism; the protein and polynucleotides therefore enable production
 XX CC of compositions comprising a component regulating (inhibiting or
 XX CC enhancing) expression of the hFATP gene useful therapeutically to alter

CC intracellular or blood levels of long chain fatty acids. Such compounds
 CC are especially useful to treat conditions associated with deficient
 CC regulation (e.g. may comprise an inhibitor to treat cardiomyopathies or
 CC diabetes or an enhancer to treat obesity. The polynucleotides are also
 CC useful to screen compounds for their effects on hFATP expression, e.g.
 CC by measuring mRNA transcription in cells/cell extracts (e.g. liver
 CC cells) contacted with the compound and comparing with that in non-
 CC contacted cells. The present sequence represents the hFATP protein.
 XX
 SQ Sequence 646 AA;

Query Match 99.9%; Score 3367; DB 20; Length 646;
 Best Local Similarity 99.8%; Pred. No. 0;
 Matches 645; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MRAPGAGAAVSVSLALLWLLGPTWTSAAAALGVVGVSGWRFLRIVCKTARRDLFGLSV 60
 Db 1 mrapgagaasvsvslallwllgptwtsaaaalgvvsgwrrflrvcktarrrdlfglsv 60
 QY 61 LIRVLELRHRRHAGHTIPRIFQAVVQRPRLALVDAGTGECTFAQILDAYSNAVANLF 120
 Db 61 lirvlelrhrrhaghtiprifqavvqrperlalvdagtgectfaqildaysnavanlf 120
 QY 121 RQLGFAPGDVVAIFLEGRPEFVGLWGLAKACMEALLNVNRRPLAFCLGTSKAKALI 180
 Db 121 rqlgfapgdvvaiflegprfefvglwglakagmeaallnvnrrplafclgtsgakali 180
 QY 181 FGGEMVAAVAESVGHGKSLIKFCSGDLGPEGLPDLTHLLDPLLEKASTAPLAQIPSKGM 240
 Db 181 fggemvaavaesvghgksllkfcsdglpgeglpdlthlldplllekastaplaqipskgm 240
 QY 241 DDRLFYIYTSGLTPKAAIVVHSRYRMAAFGHAYRMOAADVLYDCLPLYHSAGNIIG 300
 Db 241 ddrlyfitytsdgltpkAAIVVHSRYRMAAFGHAYRMOAADVLYDCLPLYHSAGNIIG 300
 QY 301 VQCLLYGLTVLVRKKFSASRFDWDCIKYNTCTVVOYIGETCRYLLKQPVREAEHRHVR 360
 Db 301 vqcllyglTVLVRKKFSASRFDWDCIKYNTCTVVOYIGETCRYLLKQPVREAEHRHVR 360
 QY 361 AVGNGLRPAIWEETERGVQIGFFYGATECNCISIANMDGKVCSCGFNSRILPHVYPIR 420
 Db 361 avgnglrpaIweeterfgrvqigefygatecncsianmdgkvsgcfnslrllphvypir 420
 QY 421 LVKVNEDTMELLRAQGLICPCQAGEPGLLVGINQDDPLRRFDGYVSESATSKIAHSV 480
 Db 421 lvkvnedtmellrdaqglcpcqagepgllvginqddplrrfdgyvsesatkskiahsv 480
 QY 481 FSKGDSAYLSGDVLMDELGYMFRDRSGDTFRWRGENVSTVEGVLRLPGQTDVAVY 540
 Db 481 fskgdsaylsGDVLMDELGYMFRDRSGDTFRWRGENVSTVEGVLRLPGQTDVAVY 540
 QY 541 GVAVPGVEGKAGMAAVADPHSLDPNATYOELQKVLAPYARPIELRLLPQVDTGTFKIQ 600
 Db 541 gvavpgvegkagmaavadvphslldpnalygelqkvlapyparpielrlpQVDTGTFKIQ 600
 QY 601 KTRLQREGFDPQTSRDLRFLDLKQGHYLPNEAVYTRICSGAFAL 646
 Db 601 ktrlqregfdrqtsdrflldlkqghyplneavytricsgafal 646

RESULT 8

AAY40436
 ID AAY40436 standard; Protein: 646 AA.

XX AC AAY40436;

XX DT 08-FEB-2000 (first entry)

XX DE Human FATP1 protein sequence.

XX KW Fatty acid transport protein; FATP; hFATP1; cardiomyopathy; diabetes;
 XX KW long-chain fatty acid metabolism; obesity; human.

XX Homo sapiens.
OS WO9951740-A2.
PN 14-OCT-1999.
PD 02-APR-1999; 99WO-EP02295.
PF 06-APR-1998; 98EP-0400823.
PR (JANC) JANSSEN PHARM NV.
PA (UNIW) UNIV WASHINGTON.
XX Martin G, Nemoto M, Deeb SS, Auwerx J;
XX WPI; 1999-620202/53.
XX New human fatty acid transport protein, hFATP, useful to screen for
PT inhibitors or enhancers useful to regulate fatty acid metabolism -
PS Claim 1; Fig 2; 83pp; English.
XX The invention provides a human fatty acid transport protein (hFATP).
CC hFATP is believed to be involved in the modulation long-chain fatty acid
CC metabolism; the protein and polynucleotides therefore enable production
CC of compositions comprising a component regulating (inhibiting or
CC enhancing) expression of the hFATP gene useful therapeutically to alter
CC intracellular or blood levels of long chain fatty acids. Such compounds
CC are especially useful to treat conditions associated with deficient
CC regulation (e.g. may comprise an inhibitor to treat cardiomyopathies or
CC diabetes or an enhancer to treat obesity. The polynucleotides are also
CC useful to screen compounds for their effects on hFATP expression, e.g.
CC by measuring mRNA transcription in cells/cell extracts (e.g. liver
CC cells) contacted with the compound and comparing with that in non-
CC contacted cells. The present sequence represents the hFATP1 protein.
XX Sequence 646 AA;
SQ

Query Match 99.6%; Score 3360; DB 20; Length 646;
Best Local Similarity 99.7%; Pred. No. 0;
Matches 644; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MRAPGAGAAVSVSLALLMLGLPTWTSAAALGVVSGGWRFLRVCKTARRDLFGLSV 60
DB 1 mrapgagaavsvslallwllglptwtsaaalgvvsggwrflrvckrtarrdlfglsv 60
QY 61 LIRVLELRHRRHAGHTIPRIFQAVVQRPRLALVDAGTGECWTFQALDAYSNAVANLF 120
DB 61 lrvlelrhrrhaghtiprifqavvqrperlalvdagtgecwtfqaldaysnavanlf 120
QY 121 ROLGAPAGDVVAIFLEGPRPEFVGLWGLAKAGMEALLNVNLRREPLAFCLGTSGAKALI 180
DB 121 rlgfapagdvvaiflegprpefvglwglakagmeallnvlnrreplafclgtsgakali 180
QY 181 FGEWMAVAEVSGLKSLKFCSDGLGPEGILPDTLHLLDLKEASTAPLAQIPSKGM 240
DB 181 fgewmavaevsghlksllkfcsgdlgpegilpdtlhlpllleastaplaqipskgm 240
QY 241 DDLRFYVTSGTGLPKAAIVVHSRYRMAAFGHHAYRMAQADVLYDCLPLVHAGNLIIG 300
DB 241 ddrlyfytsgtglpkaaivvhsryrmaafghharyrmaqadvlydclplyhsagnliig 300
QY 301 VQQLIYGLTVVLRKKFSASRFWDDCIKYNCTVVOYIGECIGRYLLKQPVREARRHVR 360
DB 301 vqqcliylgtvvlrvkkfsasrfwddcikynctvvoyigecigrlyllkqpvrearrhvr 360
QY 361 AVNGGLRPAIWEETFERFVGRQIGEFYGATECNCSIAMDGKVGSCGFNSRILPHVYP 420
DB 361 avngglrpaiweeferfgrvgrqigefygatecncsiamdgkvsgcfnslrphvypir 420
QY 421 LVKNEDTMELLRDAQGLICFCQAGEPGLLVGQINQQDPLRRFRFDGYVSESATSKIAHSV 480

Db 421 lvknedtmellrdagqgicpcagepgllvgqinqqplrrfdgyvsesatskiahsv 480
QY 481 FSKGDSAYLSGDVLYMDELGYMYFRDRSGDTFRWRGENVSTVEGVLSRLLGQTDVAVY 540
DB 481 fskgdsaylsgdvlymdelgymyfrdrsgdtfrwrgevnstvegvlsrllgqtdvavy 540
QY 541 GVAVPGVEGKAGMAAVADPHSLDDPNALYQELQKVLAPYARPIFLRLLPQVDTTGTFTKIQ 600
DB 541 gvavpgvegkagmaavadvphslldpnalyqelqkvlpapyarpiflrlppqvdttgtftkiq 600
QY 601 KTRLQREGFDPQTSRDLRFLFDLKGHYLPLNEAVYFRICSGAFAL 646
DB 601 ktrlqregfdprqtsdrflfdlkgghyplneavytricsgafal 646
RESULT 9
AAB83244
ID AAB83244 standard; Protein; 630 AA.
XX AAB83244;
XX 06-JUL-2001 (first entry)
XX Human FATP1 SEQ ID NO: 43.
XX Fatty acid transport protein; FATP; human; mouse; rat; rice blast fungus;
KW yeast; fat absorption; obesity; diabetes; heart disease; hyperlipidaemia;
KW weight control; tuberculosis; TB; anti-fungal.
XX Homo sapiens.
XX WO200121795-A2.
XX 29-MAR-2001.
XX 21-SEP-2000; 2000WO-US25891.
XX 23-SEP-1999; 99US-0405504.
XX 16-DEC-1999; 99US-0465280.
XX 17-FEB-2000; 2000US-0506252.
XX 06-JUL-2000; 2000US-0611197.
XX (WHED) WHITEHEAD INST BIOMEDICAL RES.
XX (MILL-) MILLENNIUM PHARM INC.
XX Stahl A, Hirsch DJ, Lodish HF, Gimeno RE, Tartaglia LA;
XX WPI; 2001-354783/37.
XX New fatty acid transport proteins (FATPs) useful for the manufacture of
XX medicament for treating obesity, diabetes and heart disease -
XX Disclosure; Fig 39; 287pp; English.
XX The present invention provides the protein and coding sequences of fatty
XX acid transport proteins (FATPs) from a number of species, including
XX FATP1, FATP2, FATP3, FATP4, FATP5 and FATP6 from the human, FATP1-FATP5
XX from the mouse, FATP4 and b from C. elegans, and FATP from Aspergillus
XX nidulans, Drosophila, zebrafish, Magnaporthe grisea, Mycobacterium
XX tuberculosis and Cochliobolus heterostrophus. The FATP from M.
XX treat TB. That from M. grisea (also known as rice blast fungus) can be used
XX used to develop anti-fungal agents capable of preventing infection of
XX rice. Those from the human can be used to develop treatments for
XX diabetes, heart disease, obesity, hyperlipidaemia and weight control. The
XX present sequence is one of the sequences described in the exemplification
XX of the invention.
XX Sequence 630 AA;
SQ

Query Match	97.3%;	Score 3280;	DB 22;	Length 630;
Best Local Similarity	97.5%;	Pred. No. 0;		
Matches	630;	Conservative	0;	Mismatches 0; Indels 16; Gaps 1;
QY	1	MRAPGAGASVVSIALLLGLPWTWSAAAALGVVSGGWRFLRVCKTARRDLFGLSV	60	
DB	1	mrapgagaasvvsialllwllglpwtwsaaaalgvvsggwrflrvlrvcktarrrdlfglsv	60	
QY	61	LIRVRLRRHQAGHTIPRIFQAVVQRPRLALVDAGTGCWTFQAQLDAYSNVANLF	120	
DB	61	lirvrlelrhrqaghtiprifqavvqrperlalvdagtgecwtfaqldayssnavanlf	120	
QY	121	RLGFPAGDVVAIFLEGPEFVGLWGLAKAGMEALLNNVLRREPLAFCLGTSKAKALI	180	
DB	121	rlglfapgdvvaiflegprfvgllwglakagmeaallnnvrreplafclgtsa	176	
QY	181	FGEMVAAVAESVGHGKSLKFCSDGLPEGILPDTHLLDPLLKEASTAPLAQIPSKGM	240	
DB	177	-----sghlgsllkfcsgdlpgpegilpdthlldpllleasteaplaqipsk	224	
QY	241	DDRLEFYITSGTGLPKAAIVVHSRYRMAAFGHAYRMOAADVLYDCLPLYHSAGNIIG	300	
DB	225	ddrlfyitsgttglpkaaivvhsryrmaafghayrmqaadvlydclplyhsagnilg	284	
QY	301	VGQCLLYGLTVLVRKKFSASRFWDDCIKYNCTVVQYIGEICRYLLKQPVREAEHRHVR	360	
DB	285	vgqcllygltvvlvrkkfsasrfwddcikynctvvqyigeicryllkpvreaerhrvrl	344	
QY	361	AVNGLRPAIWEETFRGVQIGEFYGATCNCNSIANMDGKVGSCGFNSRILPHVYPIR	420	
DB	345	avnglrpaiweeftrgvrqigefygatcncnsianmdgkvgscgfnslrphvypir	404	
QY	421	LKVNEDTMELLRDAQGLICPCOAGEPGLLVQGINOODPLRRFDGYSSESATSKIAHSV	480	
DB	405	lkvnedtmellrdaqglcipcogepgllyvginqqdprrfdgyssesatskkiahsv	464	
QY	481	FSKGSAYLSGDVLYMDELGYMYFRDRSGDTRFRKGENVSTTEGVLSRLLGOTDVAVY	540	
DB	465	fsgksaylsgdvlymdegymyfrdrsgdtrfrkgenvsttevegvlslrlgqtdvavy	524	
QY	541	GVAVPCEVGKAGMAVADPHSLLDPNALYQELQKVLAPYARPIFLRLLPQVDTGTFKIQ	600	
DB	525	gvavpvevgkagmavadvphslldpnalyqelqkvlapyarpiflrlpqvdtgtfkqi	584	
QY	601	KTRLQREGDPDQTSRDLFFLDKQCHYLPLNEAVYTRICSGAFAL	646	
DB	585	ktrlqregdpdqtsrdlffldkqghyplneavytricsgafal	630	
RESULT	10			
ID	AA14952			
AC	AA14952 standard; protein; 646 AA.			
CC	AA14952;			
DT	26-OCT-1999 (first entry)			
XX	Amino acid sequence of rat rnFATP1.			
XX	Fatty acid transport protein; FATP; long chain fatty acid; LCFA;			
KW	fatty acid; FATP biosynthesis; obesity; diabetes; heart disease.			
OS	Rattus norvegicus.			
XX	W0936537-A2.			
XX	22-JUL-1999.			
XX	14-JAN-1999; 99WO-US00182.			
XX	14-JAN-1999; 99US-0232201.			
PR	15-JAN-1998; 98US-0071374.			
PR	20-JUL-1998; 98US-0093491.			

Db 421 lvkvnedtmeplrdsgglcipcpgpegllvgqinqqplrrfdgyvsdsatnkkihsv 480
 QY 481 FSKGDSAYLSGDLVMDLGYMYFRDRSGDTFRWRGENVSTVEGVLRLGGOTDVAVY 540
 Db 481 frkgdsaylsqdvvmdelegymyfrdrsgdtfrwrgenvstveavslrllgtdvavy 540
 QY 541 GVAVPVEGKAGMAAADVPHSLDDPNAIYQELQKVLAPYARPIFLRLPQVDTGTGPKIQ 600
 Db 541 gvavpvegkagmaaadvphslldpnaiyqelqkvlaparyarpiflrlpqvdtgtgk 600
 QY 601 KTRLOREGFDPQTSRDLFFLDLKGCHVLPNEAVYTRICSGAFAL 646
 Db 601 ktrloregefdpqtsdrldffldlkgchvlpneavytricsgafal 646

RESULT 11

AAB83269
 ID AAB83269 standard; Protein: 646 AA.

XX AC AAB83269;

DT 06-JUL-2001 (first entry)

XX DE Murine FATP1 SEQ ID NO: 92.

XX KW Fatty acid transport protein; FATP; human; mouse; rat; rice blast fungus;
 KW yeast; fat absorption; obesity; diabetes; heart disease; hyperlipidaemia;
 KW weight control; tuberculosis; TB; anti-fungal.

XX OS Mus musculus.

XX PN W02000121795-A2.

XX PD 29-MAR-2001.

XX PF 21-SEP-2000; 2000WO-US25891.

XX PR 23-SEP-1999; 99US-0405504.

XX PR 16-DEC-1999; 99US-0405505.

XX PR 17-FEB-2000; 2000US-0506252.

XX PR 06-JUL-2000; 2000US-0611197.

XX PA (WHEE) WHITEHEAD INST BIOMEDICAL RES.

XX PI (MILL-) MILLENNIUM PHARM INC.

XX PI Stahl A, Hirsch DJ, Lodish HF, Gimeno RE, Tartaglia LA;

XX DR WPI; 2001-354783/37.

XX PT New fatty acid transport proteins (FATPs) useful for the manufacture of
 PT medicament for treating obesity, diabetes and heart disease -

XX PS Disclosure; Fig 1; 287pp; English.

XX CC The present invention provides the protein and coding sequences of fatty
 CC acid transport proteins (FATPs) from a number of species, including
 CC FATP1, FATP2, FATP3, FATP4, FATP5 and FATP6 from the human, FATP1-FATP5
 CC from the mouse, FATPa and b from C. elegans, and FATP from Aspergillus
 CC nidulans, Drosophila, zebrafish, Magnaporthe grisea, Mycobacterium
 CC tuberculosis and Cochliobolus heterostrophus. The FATP from M.
 CC tuberculosis can be used to identify inhibitors which can then be used to
 CC treat TB. That from M. grisea (also known as rice blast fungus) can be
 CC used to develop anti-fungal agents capable of preventing infection of
 CC rice. Those from the human can be used to develop treatments for
 CC diabetes, heart disease, obesity, hyperlipidaemia and weight control. The
 CC present sequence is one of the sequences described in the exemplification
 CC of the invention.

XX Sequence 646 AA;

Query Match

90.7%; Score 3057; DB 22; Length 646;

Best Local Similarity 89.6%; Pred. No. 0;
 Matches 579; Conservative 29; Mismatches 38; Indels 0; Gaps 0;

QY 1 MRAPAGAAASVVSLALLMLLGLPMTWSAAAAAGVYVGGWRFRIUVCKTARRDLGSLV 60
 Db 1 mrpagagtasvaslallwflglpwtwaaafvcyvggwrflrvcktarrrdlfgslv 60
 QY 61 LIRVLELRRHORAGHTIPRIFOAVVQVQPERLALVDAGTGCWTFQAQLDAYNAVANLF 120
 Db 61 lrvlelrhrhrragdtiprcifqavarrqperialvdassgicwtfaqltdysnavanlf 120
 QY 121 ROLGAPGDVVAIFLEGRPEFVGLWGLAKAGMAEALLNVNLRREPLAFCLGSGAKALI 180
 Db 121 rqlgfapgdvvavflegprpefvglwglakagvvaalnvnlrrreplafclgcsaakali 180
 QY 181 FGGEMVAVAEVSGLKSLKFCSGDLGPGLPDPHLLDPLLEKASTAPLAQIPSKGM 240
 Db 181 yggemaavaevseqlgskslkfcsgdlgpelldpqlldpmlaeaptplaqaqpgkgm 240
 QY 241 DDRLEYIYTSCTTGLPKAAIIVHSHRYRMAAFGHAVRMOAADVLYDCLPLYHSAGNIIG 300
 Db 241 ddrlyfitytscttglpkaaivhshryriaafghhsysmrdaadvlydcplyhsagnimg 300
 QY 301 VGQCLLYGLTVLKKFSARFWDCCIYNTCTVVOYIGEICRYLLKQPVREAEHRHVRRL 360
 Db 301 vggcilygltvvlrkkfsarfwddcvkyntctvvyigeicryllrqpvrdveqhrvrl 360
 QY 361 AVGNGLRPAIWEFEFRFGVROIGEFYGATECNCSTANMDGKVGSGGFRNSRLPHVYPIR 420
 Db 361 avngnlrpaiveeftqrfvgpqigefygatecncslanmdgkvgscgfnslrthvypir 420
 QY 421 LVKVNEDTMELLRAQGLCIPCQAGEPGLLVGQINQDPLRRFDGVVSEATSKKIAHSV 480
 Db 421 lvkvnedtmeplrdsegclpcpgpegllvgqinqqplrrfdgyvsdsatnkkihsv 480
 QY 481 FSKGDSAYLSGDLVMDLGYMYFRDRSGDTFRWRGENVSTVEGVLRLGGOTDVAVY 540
 Db 481 frkgdsaylsqdvvmdelegymyfrdrsgdtfrwrgenvstveavslrllgtdvavy 540
 QY 541 GVAVPVEGKAGMAAADVPHSLDDPNAIYQELQKVLAPYARPIFLRLPQVDTGTGPKIQ 600
 Db 541 gvavpvegkagmaaadvphslldpnaiyqelqkvlaparyarpiflrlpqvdtgtgk 600
 QY 601 KTRLOREGFDPQTSRDLFFLDLKGCHVLPNEAVYTRICSGAFAL 646
 Db 601 ktrloregefdpqtsdrldffldlkgchvlpneavytricsgafal 646

RESULT 12

AAB83235

ID AAB83235 standard; Protein: 646 AA.

XX AC AAB83235;

XX DT 06-JUL-2001 (first entry)

XX DE Murine FATP1 SEQ ID NO: 33.

XX KW Fatty acid transport protein; FATP; human; mouse; rat; rice blast fungus;
 KW yeast; fat absorption; obesity; diabetes; heart disease; hyperlipidaemia;
 KW weight control; tuberculosis; TB; anti-fungal.

XX OS Mus musculus.

XX PN W02000121795-A2.

XX PD 29-MAR-2001.

XX PF 21-SEP-2000; 2000WO-US25891.

XX PR 23-SEP-1999; 99US-0405504.

XX PR 23-SEP-1999; 99US-0405505.

XX PR 16-DEC-1999; 99US-0405505.

Matches 576; Conservative 29; Mismatches 41; Indels 1; Gaps 1;

QY 1 MRAPGAGAAVSVALLLWLLGLPWTWSAAAALGVYVGGWRFLRIVCKTARRDLFGLSV 60
 Db 1 mrappgagtasvaslallwflglpwtwsaaaafcvyvgggwrfriivcktarrrdlfglsv 60

QY 61 LIRVLELRHRRAGHTIPRIFOAVVQROPERLALVDAGTGCWTFQAOLDAYSNAVANLF 120
 Db 61 lirvlelrhrragdtipcfqavarrqperlalvdassgicwtfaqltdtysnavanlf 120

QY 121 RQLGFAPGDVVAIFLEGREFVGLWLGLAKAGMEALNVLNRRERPLAFCLGTSGAKALI 180
 Db 121 rqlgfapgdvavflegrefvglwlgakagvvaallnvnrrerplafclgtsgaakali 180

QY 181 FGGEMVAAVAESVSHLGLKFCSDGLGPEGILPDTHLLDPLLEKEASTAPLAQIPSKGM 240
 Db 181 yggemaaavaesvseqlgksllkfcsgdligpesilpdtqlldplmaeapttlaqapqkgm 240

QY 241 DDLRFYIYTSGTGLPKAAIVVHSRYRMAAFGHAYRMOAADVLYDCLPLVHSAGNIIG 300
 Db 241 ddrlfyiytsgttglpkaaivvhsryriaafghhsymraadvlydclplyhsagnimg 300

QY 301 VGOCILYGLTVLVRKKFSARFDDCIKYNCTVVOYIGEICRYLLKQPVREARRHRVRL 360
 Db 301 vgcilygltvvlvrkkfsarfdciikynctvvdvdielcryllrqpvrdveqhrvrl 360

QY 361 AVGNGLRPAIWEETERFGRVQIGEFYGATECNCSIANMDGKVGSCGFSNRILPHVPIR 420
 Db 361 avngnlrpaieweetrfgrvqigefygatecnscianmdgkvgscgfsnrilthvypir 420

QY 421 LKVNEDTMELLRDAGGLICPCQAGEPGLLVQINQDPLRRFDGYVSSATSKTAHSV 480
 Db 421 lkvnedtmelrldseglcpcqagepgllvqinqdplrrfdgyvsdsatnkkiahsv 480

QY 481 FSKGDSAYLSGDLVLMDELGYMVPDRSGDTFRWRGENVSTTEVEGVLSRLLGQTDVAVY 540
 Db 481 frkgdsaylsgdvlymdelgymvdrsgdtfrwrgenvstteveavlsrllgqtdvavy 540

QY 541 GVAVPVEGKAGMAAADPHSLDNPNAIYQELQKVLAPYARPIFLRLPQVDTGTGFIQ 600
 Db 541 gvavpvegkagmaaiaadphslldnpnaiyqelqkvlasyarpiflrlpqvdtgtgfik 600

QY 601 KTRIQREGFDRQTSRDLRFLDLKQG-HYLPLNEAVYTRICSGAFAL 646
 Db 601 ktriqregfdrqtsrldrlflldkqg-hylplneavytricsgafal 647

RESULT 14
 AAB83255
 XX AAB83255 standard; Protein; 647 AA.
 AC AAB83255;
 XX

DT 06-JUL-2001 (first entry)
 XX
 DE Murine FATP1 SEQ ID NO: 65.
 XX

KW Fatty acid transport protein; FATP; human; mouse; rat; rice blast fungus;
 KW yeast; fat absorption; obesity; diabetes; heart disease; hyperlipidaemia;
 KW weight control; tuberculosis; TB; anti-fungal.
 XX

OS Mus musculus.
 XX
 XX W0200121795-A2.
 PN
 XX
 PD 29-MAR-2001.
 XX
 XX 21-SEP-2000; 2000WO-US25891.
 PF
 XX 23-SEP-1999; 99US-0405504.
 PR
 PR 23-SEP-1999; 99US-0405505.
 PR
 PR 16-DEC-1999; 99US-0465280.
 PR
 PR 17-FEB-2000; 2000US-0506252.

06-JUL-2000; 2000US-0611197.
 (WHEED) WHITEHEAD INST BIOMEDICAL RES.
 (MILL-) MILLENNIUM PHARM INC.
 Stahl A, Hirsch DJ, Lodish HF, Gimeno RE, Tartaglia LA;
 WPI; 2001-354783/37.
 DR N-PSDB; AAF89027.
 XX
 XX New fatty acid transport proteins (FATPs) useful for the manufacture of
 PT medicament for treating obesity, diabetes and heart disease .
 PS Disclosure; Fig 63; 287pp; English.
 CC
 CC The present invention provides the protein and coding sequences of fatty
 CC acid transport proteins (FATPs) from a number of species, including
 CC FATP1, FATP2, FATP3, FATP4, FATP5 and FATP6 from the human, FATP1-FATP5
 CC from the mouse, FATPa and b from C. elegans, and FATP from Aspergillus
 CC nidulans, Drosophila, zebrafish, Magnaporthe grisea, Mycobacterium
 CC tuberculosis and Cochliobolus heterostrophus. The FATP from M.
 CC treat TB. That from M. grisea (also known as rice blast fungus) can be
 CC used to develop anti-fungal agents capable of preventing infection of
 CC rice. Those from the human can be used to develop treatments for
 CC diabetes, heart disease, obesity, hyperlipidaemia and weight control. The
 CC present sequence is one of the sequences described in the exemplification
 CC of the invention..
 XX
 SQ Sequence 647 AA;

Query Match 89.8%; Score 3026.5; DB 22; Length 647;
 Best Local Similarity 89.0%; Pred. No. 0;
 Matches 576; Conservative 29; Mismatches 41; Indels 1; Gaps 1;

QY 1 MRAPGAGAAVSVALLLWLLGLPWTWSAAAALGVYVGGWRFLRIVCKTARRDLFGLSV 60
 Db 1 mrappgagtasvaslallwflglpwtwsaaaafcvyvgggwrfriivcktarrrdlfglsv 60

QY 61 LIRVLELRHRRAGHTIPRIFOAVVQROPERLALVDAGTGCWTFQAOLDAYSNAVANLF 120
 Db 61 lirvlelrhrragdtipcfqavarrqperlalvdassgicwtfaqltdtysnavanlf 120

QY 121 RQLGFAPGDVVAIFLEGREFVGLWLGLAKAGMEALNVLNRRERPLAFCLGTSGAKALI 180
 Db 121 rqlgfapgdvavflegrefvglwlgakagvvaallnvnrrerplafclgtsgaakali 180

QY 181 FGGEMVAAVAESVSHLGLKFCSDGLGPEGILPDTHLLDPLLEKEASTAPLAQIPSKGM 240
 Db 181 yggemaaavaesvseqlgksllkfcsgdligpesilpdtqlldplmaeapttlaqapqkgm 240

QY 241 DDLRFYIYTSGTGLPKAAIVVHSRYRMAAFGHAYRMOAADVLYDCLPLVHSAGNIIG 300
 Db 241 ddrlfyiytsgttglpkaaivvhsryriaafghhsymraadvlydclplyhsagnimg 300

QY 301 VGOCILYGLTVLVRKKFSARFDDCIKYNCTVVOYIGEICRYLLKQPVREARRHRVRL 360
 Db 301 vgcilygltvvlvrkkfsarfdciikynctvvdvdielcryllrqpvrdveqhrvrl 360

QY 361 AVGNGLRPAIWEETERFGRVQIGEFYGATECNCSIANMDGKVGSCGFSNRILPHVPIR 420
 Db 361 avngnlrpaieweetrfgrvqigefygatecnscianmdgkvgscgfsnrilthvypir 420

QY 421 LKVNEDTMELLRDAGGLICPCQAGEPGLLVQINQDPLRRFDGYVSSATSKTAHSV 480
 Db 421 lkvnedtmelrldseglcpcqagepgllvqinqdplrrfdgyvsdsatnkkiahsv 480

QY 481 FSKGDSAYLSGDLVLMDELGYMVPDRSGDTFRWRGENVSTTEVEGVLSRLLGQTDVAVY 540
 Db 481 frkgdsaylsgdvlymdelgymvdrsgdtfrwrgenvstteveavlsrllgqtdvavy 540

QY 541 GVAVPVEGKAGMAAADPHSLDNPNAIYQELQKVLAPYARPIFLRLPQVDTGTGFIQ 600

Db 541 gvavpgvegkamaaiaqhsqldpnsmygelkvlasypifrlpqvdtgtfkig 600
QY 601 KTRLOREGFDRPQTSDFRDLKQK-HYPLNEAVYTRICSGAFAL 646
Db 601 ktrlgregfdrpqtstfrifdlksgtrypldervharicagdfsl 647

RESULT 15

ID AAB83252 standard; Protein; 630 AA.
XX
AC AAB83252;
XX
DT 06-JUL-2001 (first entry)
XX
DE Rat FATP1 SEQ ID NO: 59.
XX
KW Fatty acid transport protein; FATP; human; mouse; rat; rice blast fungus;
KW yeast; fat absorption; obesity; diabetes; heart disease; hyperlipidaemia;
KW weight control; tuberculosis; TB; anti-fungal.
XX
OS Rattus norvegicus.
XX
PN WO200121795-A2.
XX
PD 29-MAR-2001.
XX
PF 21-SEP-2000; 2000WO-US25891.
XX
PR 23-SEP-1999; 99US-0405504.
PR 23-SEP-1999; 99US-0405505.
PR 16-DEC-1999; 99US-0465280.
PR 17-FEB-2000; 2000US-0506252.
PR 06-JUL-2000; 2000US-0611197.
XX
PA (WHED) WHITEHEAD INST BIOMEDICAL RES.
PA (MILL-) MILLENNIUM PHARM INC.
XX
PI Stahl A, Hirsch DJ, Lodish HF, Gimeno RE, Tartaglia LA;
DR WPI: 2001-354783/37.
DR N-PSDB; AAF89024.
XX
PT New fatty acid transport proteins (FATPs) useful for the manufacture of
PT medicament for treating obesity, diabetes and heart disease -
XX
PS Disclosure; Fig 57; 287pp; English.
XX

CC The present invention provides the protein and coding sequences of fatty
CC acid transport proteins (FATPs) from a number of species, including
CC FATP1, FATP2, FATP3, FATP4, FATP5 and FATP6 from the human, FATP1-FATP5
CC from the mouse, FATP6 and b from C. elegans, and FATP from Aspergillus
CC nidulans, Drosophila, zebrafish, Magnaporthe grisea, Mycobacterium
CC tuberculosis and Cochliobolus heterotrophus. The FATP from M.
CC treat TB, that from M. grisea (also known as rice blast fungus) can be
CC used to develop anti-fungal agents capable of preventing infection of
CC rice. Those from the human can be used to develop treatments for
CC diabetes, heart disease, obesity, hyperlipidaemia and weight control. The
CC present sequence is one of the sequences described in the exemplification
CC of the invention.

XX Sequence 630 AA;

Query Match 88.1%; Score 2970; DB 22; Length 630;
Best Local Similarity 87.2%; Pred. No. 2.6e-299;
Matches 563; Conservative 30; Mismatches 37; Indels 16; Gaps 1;

QY 1 MRAPGAGAAVSVLAILWLLGLPWTWSAAAALGVYVSGGWRFLRVCKTARDFLGLSV 60
Db 1 mrtpgagtasvaslgllwllglpwtwsaaafgvvyvggwrflrvcktardfglfsv 60

QY 61 LIRVLELRHRRHAGHTIPRIFOAVVQORPERLALVDAGTGCWTFQAOLDAYSNAVANLF 120
Db 61 Lirvrlelrhrhragdtiprifqavqrqperialvdassgicwtfaqidtsynavanlf 120
QY 121 ROLGFAPGDVVAIFELGRPEFVGLWGLAKAGMEALLNVNLRREPLAFCLGTSGAKALI 180
Db 121 lqlgfapgdvvavflegfpefvgfwglakagvvaalnvnlrrreplafclgtsgaakali 180
QY 181 FGGEMVAAEVSGHLKSLIKFCSDGLPGLPOTHLDDLKPLKASTAPLAQIPSKGM 240
Db 181 yggemaaavaevseqlksllkfcsgdlpdesvlpdtqllldpmlaeapttlaqapqgm 240
QY 241 DDRLFYIYTSCTGLPKAAIVVHSHRYRMAAFGHHAHYRMAQADVLDCLPLVHSAAGNIIG 300
Db 241 ddrifiytsctgtlpkaaivvhshryriaafghhsyrmandvlydcplvhsagning 300
QY 301 VGOCILYGLTVVLRKKTSAFWDCCIKNCTVVQYIGEICRYLLKOPVREARRHRVRL 360
Db 301 vggcliygltvvllrkksafwddcvkynctvvqyigeicryllrqprdvrrhrvrl 360
QY 361 AVGNGLRPAIWEETFRFGRQIGEFYGATECNCSTANMDGKVGSCGFNSRIPLPHVYPIR 420
Db 361 avngnlrpaieweetfgrqigefygatecncsianmdgkvsgcgnfnsrliithvypir 420
QY 421 LVKYNEDTMELLRDAOGLCIPCOAGEPLLVGOINQODPLRRRFDGYYVESATSKIAHSV 480
Db 421 lvkynedtmelrdsqglcipcqpgepllvvgqinqqdprrrfdgyvsdsatnkkiahsv 480
QY 481 FSKGDSAYLSGDVLMDELGYMYFRDRSGDTFRWRGENSVTTEVEGVLRLGQTDVAVY 540
Db 481 -----delgymyfrdrsgdtfrwrgenvstteveavlsrllgqtdvavy 524
QY 541 GVAVPGVEGKAGMAAVADPHSLDPNATYQELQKVLAPYARPIFLRLLPQVDTGTGFKIQ 600
Db 525 gvavpgvegksgmaaiadphnqldpnsmygelkvlasyaqpfirllpqvdtgtfkig 584
QY 601 KTRLOREGFDRPQTSDFRDLKQK-HYPLNEAVYTRICSGAFAL 646
Db 585 ktrlgregfdrpqtstfrifdlksgtrypldervharicagdfsl 630

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